

1. A pelvic airbag comprising:  
a front panel; and  
a rear panel attached to the front panel, the airbag being constructed to be retained  
in a vehicle door between the inner skin and the trim panel.

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2. A pelvic airbag as in claim 1 wherein the thickness of the airbag in the  
uninflated configuration is between about 2 to about 25 millimeters.

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3. A pelvic airbag as in claim 1 wherein the thickness of the airbag in the  
uninflated configuration is between about 7.5 to about 25 millimeters.

4. A pelvic airbag as in claim 1 wherein the thickness of the airbag in the  
uninflated configuration is between about 2 to about 4 millimeters.

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5. A pelvic airbag as in claim 1 wherein the airbag is made of a material that  
is selected from the group consisting of metal, plastic, or combinations of metal and  
plastic.

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6. A pelvic airbag as in claim 1 wherein the airbag is constructed such that  
when it is in the uninflated configuration, the shape of the airbag is substantially  
rectangular.

7. A pelvic airbag as in claim 1 wherein the airbag is in fluid communication with an inflator housed within an inflator housing.

5 8. A pelvic airbag is in claim 1 wherein the airbag provides impact protection to the pelvis and/or leg of a vehicle occupant.

9. A pelvic airbag as in claim 1 wherein a reaction beam is attached to the inner skin.

10 10. A pelvic airbag as in claim 9 wherein the reaction beam is bowed.

11. A pelvic airbag as in claim 9 further comprising a rubber damper that is positioned between the reaction beam and an inflator housing.

15 12. A pelvic airbag as in claim 1 wherein the airbag comprises one or more folds.

13. A pelvic airbag as in claim 1 wherein the airbag is attached to an attachment mechanism.

20 14. A pelvic airbag as in claim 13 wherein the attachment mechanism comprises one or more weldments.

15. A pelvic airbag as in claim 13 wherein the attachment mechanism comprises one or more mounting brackets.

16. A pelvic airbag as in claim 15 wherein one or more fasteners engage the one or more mounting brackets and attach the airbag to the inner skin.

17. A pelvic airbag as in claim 15 wherein the brackets are attached to the airbag via one or more connectors.

18. A pelvic airbag as in claim 1 wherein the airbag further comprises a shell layer that is attached to the front panel.

19. A pelvic airbag as in claim 1 wherein the shell layer is designed to fit into an aperture in the trim panel.

20. A pelvic airbag as in claim 1 wherein the trim panel is an integral layer that covers the airbag.

21. A pelvic airbag assembly as in claim 1 wherein the airbag is in the inflated configuration, the airbag increases the rigidity of the vehicle door.

22. A pelvic airbag assembly as in claim 1 wherein the airbag assembly is constructed is constructed such that when the when the airbag is in the inflated configuration, the airbag is capable of dissipating the energy associated with the crash.

5 23. A pelvic airbag as in claim 1 wherein the rear panel is constructed without any folds.

24. A pelvic airbag as in claim 1 wherein the airbag is constructed such that deploying the airbag into the inflated configuration decreases the lateral length of the  
10 airbag.

25. A pelvic airbag as in claim 1 wherein the airbag is constructed such that deploying the airbag into the inflated configuration causes the lateral length of the airbag to remain substantially unchanged.  
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26. A pelvic airbag assembly comprising:  
a pelvic airbag, the airbag comprising a front panel and a rear panel attached to the front panel, wherein the thickness of the airbag in the uninflated configured being between about 2 to about 25 millimeters; and

5 an attachment mechanism for attaching the airbag within a vehicle door.

27. A pelvic airbag as in claim 26 wherein the thickness of the airbag in the uninflated configuration is between about 7.5 to about 25 millimeters.

10 28. A pelvic airbag as in claim 26 wherein the thickness of the airbag in the uninflated configuration is between about 2 to about 4 millimeters.

29. A pelvic airbag assembly as in claim 26 wherein the assembly further comprises an inflator in fluid communication with the airbag, the inflator being housed  
15 within an inflator housing that is attached to the rear panel.

30. A pelvic airbag assembly as in claim 26 further comprising a reaction beam.

20 31. A pelvic airbag assembly as in claim 26 further comprising a rubber dampener.

32. A pelvic airbag assembly as in claim 26 wherein the airbag is made of a material selected from the group consisting of metal, plastic, or combinations of metal and plastic.

5 33. A pelvic airbag assembly as in claim 26 wherein the pelvic airbag further comprises one or more folds.

34. A pelvic airbag assembly as in claim 26 wherein the attachment mechanism comprises one or more mounting brackets.

10 35. A pelvic airbag assembly as in claim 26 wherein the attachment mechanism comprises one or more weldments.

15 36. A pelvic airbag assembly as in claim 26 wherein the airbag further comprises a shell layer that is attached to the front panel.

37. A pelvic airbag assembly as in claim 26 wherein the airbag is inflated, the airbag increases the rigidity of the vehicle door.

20 38. A pelvic airbag assembly as in claim 26 wherein the airbag assembly is constructed is constructed such that when the when the airbag is in the inflated configuration, the airbag is capable of dissipating the energy associated with the crash.

39. A pelvic airbag assembly as in claim 26 wherein the rear panel is constructed without any folds.

40. A pelvic airbag assembly as in claim 26 wherein the assembly is constructed such that when the airbag is deployed into the inflated configuration, the lateral length of the airbag will decrease.

41. A pelvic airbag assembly as in claim 26 wherein the assembly is constructed such that when airbag is deployed into the inflated configuration, the lateral length of the airbag remains substantially unchanged.

42. A pelvic airbag assembly comprising:  
a pelvic airbag, the airbag comprising a front panel and a rear panel attached to a front panel, the airbag constructed to be retained in a vehicle door between the inner skin and the trim panel;

5 an inflator in fluid communication with the airbag, the inflator being housed within an inflator housing that is attached to the rear panel; and  
a reaction beam attached to the inner skin.

43. A pelvic airbag assembly as in claim 42 wherein the reaction beam is  
10 bowed such that it presses against the rear panel.

44. A pelvic airbag assembly as in claim 42 wherein the thickness of the airbag in the uninflated configuration between about 2 to about 25 millimeters.

15 45. A pelvic airbag assembly as in claim 42 wherein the airbag is made of a material that is selected from the group consisting of metal, plastic, or combinations of metal and plastic.

46. A pelvic airbag assembly as in claim 42 wherein the rear panel includes  
20 one or more folds.

47. A pelvic airbag assembly as in claim 42 wherein the airbag is attached the vehicle door via an attachment mechanism.



48. A pelvic airbag as in claim 47 wherein the attachment mechanism comprises one or more weldments.

5 49. A pelvic airbag as in claim 47 wherein the attachment mechanism comprises one or more mounting brackets.

50. A pelvic airbag assembly as in claim 42 wherein the airbag includes a shell layer that is attached to the front panel.

10 51. A pelvic airbag assembly as in claim 42 wherein the trim panel covers the airbag.

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52. A pelvic airbag assembly comprising:  
a vehicle door comprising an outer skin, an inner skin, and a trim panel;  
a pelvic airbag, the airbag comprising a front panel and a rear panel attached to  
the front panel, the airbag being constructed to be retained in a vehicle door between the  
5 inner skin and the trim panel; and  
an inflator housed within an inflator housing, the inflator being in fluid  
communication with the airbag.

53. A pelvic airbag assembly as in claim 52 wherein the thickness of the  
10 airbag in the uninflated configuration between about 2 to about 25 millimeters.

54. A pelvic airbag assembly as in claim 52 wherein the airbag is made of a  
material selected from the group consisting of metal, plastic, or combinations of metal  
and plastic.  
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55. A pelvic airbag assembly as in claim 52 wherein the assembly further  
comprises a reaction beam that is attached to the inner skin, the reaction beam being  
bowed such that it presses against the rear panel.

20 56. A pelvic airbag assembly as in claim 52 wherein the airbag is attached to  
the vehicle door via an attachment mechanism.

57. A pelvic airbag assembly as in claim 52 wherein the trim panel covers the airbag.

58. A pelvic airbag assembly as in claim 52 wherein the door further  
5 comprises a door core.

59. A pelvic airbag assembly as in claim 58 wherein the door core comprises one or more tear seams.

60. A pelvic airbag as in claim 58 wherein the door core covers the airbag.  
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61. A pelvic airbag as in claim 58 wherein the door core includes a hole.

62. A pelvic airbag assembly as in claim 52 wherein the airbag is positioned  
15 below the armrest of the vehicle door.

63. A pelvic airbag assembly as in claim 52 wherein the inner skin comprises a aperture that accommodates the airbag.

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